


(19)  **Europäisches Patentamt**  
**European Patent Office**  
**Office européen des brevets**



(11) **EP 0 811 939 A3**

(12)

# **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
 30.12.1998 Bulletin 1998/53

(51) Int. Cl.<sup>6</sup>: G06F 17/30

(43) Date of publication A2:  
 10.12.1997 Bulletin 1997/50

(21) Application number: 97302827.7

(22) Date of filing: 24.04.1997

(84) Designated Contracting States:  
 BE DE FR GB IT LU NL

(30) Priority: 03.06.1996 US 656924

(71) Applicant: Webtv Networks, Inc.  
 Palo Alto, California 94301 (US)

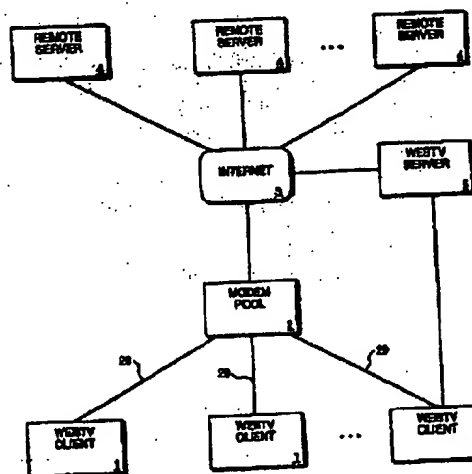
(72) Inventors:  
 • Mighdoll, Lee S.  
 San Francisco, California 94114 (US)

• Leak, Bruce A.  
 Palo Alto, California 94301 (US)  
 • Perlman, Stephen G.  
 Mountain View, California 94041 (US)  
 • Goldman, Phillip Y.  
 Los Altos, California 94024 (US)

(74) Representative:  
 Wombwell, Francis et al  
 Potts, Kerr & Co.  
 15, Hamilton Square  
 Birkenhead Merseyside L41 6BR (GB)

(54) **Method and apparatus for providing proxying and transcoding of documents in a distributed network**

(57) A method of providing a document to a client coupled to a server is provided. The server provides a number of internal services to the client, including functioning as a caching proxy on behalf of the client for purposes of accessing the World Wide Web. The proxying server includes a persistent document database, which stores various attributes of all documents previously retrieved in response to a request from a client. When a Web document is retrieved from a remote server in response to a request from the client, the database is consulted and the stored information relating to the requested document is used by the server in transcoding the document. The document is transcoded for various purposes, including to circumvent bugs or quirks found in the document, to size the document for display on a television set, to improve transmission efficiency of the document, and to reduce latency. The transcoder makes use of the document database to perform these functions. The document database is also used for prefetching previously requested documents and images and for reducing latency when downloading images to the client.



**FIG. 1**

EP 0 811 939 A3

BEST AVAILABLE COPY

EP 0 811 939 A3

European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number

EP 97 30 2827

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (CLASS)
X	BROOKS, C., MAZER, M.S., WEEKS, S., MILLER, J.: "Application-specific Proxy Servers as HTTP Stream Transducers" FOURTH INTERNATIONAL WORLD WIDE WEB CONFERENCE, BOSTON, December 1995, pages 1-9, XP002081461 http://www.w3.org/Conferences/WWW4/Papers/56/ * the whole document *	1,2,5,6, 8-12,15, 17,23,24	G06F17/30
A	---	3,13	
X	FOX A ET AL: "Reducing WWW latency and bandwidth requirements by real-time distillation" COMPUTER NETWORKS AND ISDN SYSTEMS, vol. 28, no. 11, May 1996, page 1445-1456 XP004018241 * the whole document *	1,4-7, 10-12, 19,23,24	
X	EP 0 573 248 A (HUGHES AIRCRAFT CO) 8 December 1993 * abstract * * claims *	20-22	TECHNICAL FIELD SEARCHED (CLASS) G06F
A	LUOTONEN A ET AL: "World-Wide Web proxies" COMPUTER NETWORKS AND ISDN SYSTEMS, vol. 27, no. 2, November 1994, page 147-154 XP004037985 * the whole document *	1-24	
A	DINGLE A ET AL: "Web cache coherence" COMPUTER NETWORKS AND ISDN SYSTEMS, vol. 28, no. 11, May 1996, page 907-920 XP004018195 * the whole document *	1,11,15, 16	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 11 November 1998	Examiner Abbing, R
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons A: member of the same patent family, corresponding document	

EPO Form 1500 03.02 (06/03)

BEST AVAILABLE COPY

EP 0 811 939 A3

European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 97 30 2827

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 6)
A	SCHULZRINNE H: "WORLD WIDE WEB: WHENCE, WHITHER, WHAT NEXT?" IEEE NETWORK: THE MAGAZINE OF COMPUTER COMMUNICATIONS, vol. 10, no. 2, 1 March 1996, pages 10-17, XP000570608 * page 16, column 2, line 37 - page 16, column 2, line 50 * -----	1,4	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 6)
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>11 November 1998</b>	Examiner <b>Abbing, R</b>
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosures P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons A : member of the same patent family, corresponding document			

EPO FORM 1533 (01/02) (PUB.001)